REMARKS

Claims 1, 4-5, 7 and 9 have been amended to recite the inventions with greater clarity. In particular, Claim 1 is amended to correct typographical errors such as replacing "pass" with "passing," and "provide" with "providing." Claim 4 has been amended to replace "pass" with "passing." Claim 5 has been amended to replace "The method" with "A method" and replace "emit" with "emits." Claim 9 has been amended to replace "The method" with "A method." Claim 1 is further amended to replace "acoustic-optic" with "tunable" to correct antecedent inconsistency. No new matter has been introduced by the amendments to the Claims.

Claim Rejections under 35 U.S.C. § 102(b)

Claims 4-6 and 9-10 have been rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by U.S. Patent No. 5,194,921("Tambo *et al.*"). Applicants traverse the rejection.

It is established that a claim is anticipated under 35 U.S.C. § 102 only if each and every limitation as set forth in the claim is found, either expressly or inherently described in a single prior art reference. Tambo *et al.* do not teach each and every limitation recited in instant Claims 4-6 and 9-10.

Tambo *et al.* teach a method and an apparatus for detecting the status of a flocculation process of components in a liquid. Tambo *et al.* use a beam of light including at least two wavelengths λ_1 and λ_2 which exhibit distinct or dominant absorption or scattering characteristics with regard to a suspended component and a flocculated component in a sample liquid. The beam of light irradiates the sample which includes a plurality of components to be flocculated. Then, the transmitted or absorbed amount of the wavelength components of λ_1 and λ_2 through the sample liquid are simultaneously measured so that a correlation coefficient between the two wavelength components of the transmitted beam is calculated in real time, thereby measuring the

progress of the flocculation process. See Col. 6, lines 21-33. As shown in FIG. 1, an illumination beam of light 2 emitted from a xenon lamp 1 is condensed by a reflector 3, is incident to a collimator 4, is further shaped by a slit 5 into a beam having a predetermined cross-sectional shape, and is incident onto a sampling liquid 7 flowing in the direction indicated by an arrow P in a flow cell 6 made of fused quartz. A beam of light 8 transmitted through the sampling liquid 7 is passed through a slit 9 identical to slit 5, and is incident to a half mirror 10. The half mirror 10 splits the beam into two beams: one of the two beams is incident to a photodiode 13 through an interference filter 11; and the other beam is incident to a photodiode 14 through an interference filter 12. The photodiodes 13 and 14 produce voltage signals V_1 and V_2 across load resistors 15 and 16, respectively. See FIG. 1 and Col. 8, lines 18-34.

Instant Claim 4 calls for a multicolor particle analyzer for analyzing particles each of which emits light at multiple distinct wavelengths as they pass through an analyzing volume comprising a tunable filter for receiving the emitted light and repetitively passing light at said distinct wavelength as said particles pass through the analyzing volume, and a single detector for receiving the light from the tunable filter and providing output signals for each distinct wavelength as the particle passes through the analyzing volume.

Instant Claim 5 calls for a method of analyzing particles each of which fluoresces and emits light at multiple different distinct wavelengths responsive to excitation light. The method comprises the steps of causing the particles to flow through an analyzing region, applying excitation light to the analyzing region to cause each particle to emit light at its distinctive wavelengths as it passes through the analyzing region, receiving the emitted light with a tunable optical filter to repetitively and sequentially pass light at each of said multiple distinct wavelengths, and detecting the light passed by the filter with a single detector to provide output signals representative of the distinct wavelengths.

Instant Claim 9 calls for a method of analyzing particles in a fluid which fluoresce at one or more wavelengths. The method comprises the steps of causing the fluid to flow past a source of illumination whereby particles emit fluorescent light at the one or more wavelengths, periodically detecting the emitted characteristic fluorescence of said particles as the flow through the illumination source, and providing output signals representative of the characteristic wavelength of each of said particles.

Tambo *et al.* do not teach or suggest a multicolor analyzer for analyzer particles each of which emits light at multiple distinct wavelengths as they pass through an analyzing volume. To the contrary, Tambo *et al.* teach an apparatus that uses two wavelengths λ_1 and λ_2 which exhibit distinct or dominant absorption with regard to a suspended component and a flocculated component in a sample liquid. Nor do Tambo *et al.* teach or suggest a tunable filter for receiving the emitted light and repetitively passing light at the distinct wavelength as the particles pass through the analyzing volume. To the contrary, Tambo *et al.* teach two interference filters 11 and 12 which have fixed frequency. The interference filters taught by Tambo *et al.* are not tunable filters.

Therefore, reconsideration of the rejections of Claims 4, 5 and 9 under 35 U.S.C. 102(b) is respectfully requested.

Claims 6 and 10 depend on Claims 5 and 9 respectively and recite further limitations. Claims 6 and 10 are therefore allowable for at least the same reasons as for Claims 5 and 9 and for reasons of additional limitations recited therein.

Claim Rejections under 35 U.S.C. § 103(a)

Claims 1-3 and 7-8 have been rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Patent No. 5,194,921 ("Dovichi *et al.*") in view of Tambo *et al.* Applicants traverse the rejection.

It is well established that to establish a proper *prima facie* case of obviousness, three criteria must be met. First, there must be some suggestion or motivation, either in the cited references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the cited reference relied upon by the Examiner to arrive at the claimed invention. Second, there must be a reasonable expectation that the suggested modification or combination would be successful. Finally, the prior art reference (or references when combined) must teach or suggest each and every limitation of the rejected claims. The teaching or suggestion to make the claimed modification or combination and the reasonable expectation of success must both be found in the prior art, and not based upon in the applicant's disclosure. M.P.E.P. §706.02. Applicants respectfully submit that a *prima facie* obviousness has not been established and the inventions recited in instant Claims 1-3 and 7-8 are patentable over the cited references.

Dovichi *et al.* teach a multiple capillary biochemical analyzer for sequencing DNA and performing other analyses, in which a set of capillaries extends from wells in a microtiter plate into a cuvette. As shown in FIGS. 1-2, a laser 130 or other source of collimated electromagnetic radiation provides a collimated beam 132 of light that is aligned to pass from a focusing lens 134 into the chamber 34, as close as possible above the barrier member 90. Alternatively, the beam 132 may be split into a set of parallel beams with appropriate optics, with one parallel beam per row of capillaries. Fluorescence is excited in the chamber 34, above the barrier member 90. The fluorescence passes through the holes 80 in barrier member 90, through the glass window 100 at the bottom of lower chamber 102, and through a two element air-spaced condenser lens 136, typically operated at unit magnification. The condenser 136 images the fluorescence onto a photodetector 138. A spectral filter shown diagrammatically in dotted lines at 139 may be used to isolate fluorescence from specific dyes. See also Col. 5, lines 29-46.

Instant Claim 1 calls for a multicolor particle analyzer including a capillary, means for projecting a light beam through said capillary to illuminate a predetermined volume in said capillary, means for causing a sample containing sample particles which naturally fluoresce or are tagged to fluoresce and emit light at one or more distinct wavelengths to flow along the capillary through said predetermined volume, a tunable filter for receiving said light emitted by each particle and repetitively passing light pulses for each wavelength of light emitted by each particle as it passes through said predetermined volume, and a detector for detecting the output light from said tunable filter and providing an output pulse for each light pulse at each of said multiple wavelengths.

Instant Claim 7 calls for a particle analyzer for analyzing particles in a sample fluid which fluoresce and emit light at one or more wavelengths. The particle analyzer comprises a capillary for receiving the sample fluid, a pump for causing the sample fluid to flow through the capillary, a light source for projecting a light beam through the capillary to illuminate a predetermined region along the capillary whereby singulated particles flow through the illuminated region and emit fluorescent light at the one or more wavelengths, a tunable optical filter responsive to tuning pulses for receiving the florescent light and repetitively passing pulses of light at said one or more wavelengths as a particle passes through said region, a detector for receiving said light pulses and provide an output signal for each of said pulses, and, a processor configured to receive said out signals and provide an output signal representative of the amplitude of each of said one or more fluorescent wavelengths.

As the Examiner correctly pointed out, Dovichi *et al.* do not teach or suggest a tunable filter for receiving light emitted by each particle and repetitively passing light pulses for each wavelength of light emitted by each particle as it passes through the predetermined volume, as called for by instant Claim 1, or a tunable optical filter responsive to tuning pulses for receiving the florescent light and repetitively passing pulses of light at one or more wavelengths as a particle passes through the predetermined region, as called for by instant Claim 7. While Dovichi *et al.* teach a filter

139 in FIG. 2 and in Col. 5, lines 44-45, the filter 139 is to select a fixed band of wavelengths to be viewed by the photodetector 138. The filter is not "scanned" at a rate that allows multiple light pulses to be detected from single particle during the excitation region transit time of each particle.

As stated above, Tambo *et al.* do not teach or suggest a tunable filter for receiving the emitted light and repetitively passing light at the distinct wavelength as the particles pass through the analyzing volume. The interference filters 11 and 12 taught by Tambo *et al.* have fixed frequency and are not tunable filters.

There is no suggestion or motivation, in either Tambo *et al.* or Dovichi *et al.* or in the knowledge generally available to one of ordinary skill in the art, to combine the cited reference arrive at the claimed invention. While Tambo *et al.* teach an apparatus that uses two wavelengths λ_1 and λ_2 which exhibit distinct or dominant absorption with regard to a suspended component and a flocculated component in a sample liquid, Dovichi *et al.* teach a flow instrument for measuring the fluorescent emission from multiple, sheath flow cells that are illuminated in a direction perpendicular to the flow. Tambo *et al.* and Dovichi *et al.* teach different apparatuses using different absorption and emission principles and thus do not motivate one of ordinary skill to combine them.

Even if one of ordinary skill would attempt to combine Tambo *et al.* with Dovichi *et al.*, the combination would not arrive at the invention recited in instant Claim 1 or 7 because neither Tambo *et al.* nor Dovichi *et al.* teach or suggest the tunable filter scanned at a rate that allows multiple light pulses to be detected from a single particle during the transit time of each particle as called for by instant Claim 1 or 7.

Therefore, reconsideration of the rejection of Claims 1 and 7 under 35 U.S.C. 103(a) is respectfully requested.

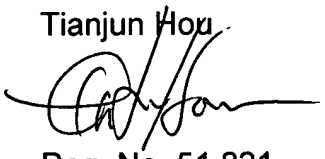
Claims 2-3 and 8 depend on Claims 1 and 7 respectively. Claims 2-3 and 8 are therefore allowable for at least the same reasons as for Claims 1 and 7 and for reasons of additional limitations recited therein.

Applicants respectfully submit that the instant application is in condition for allowance. An early indication of the same is therefore respectfully requested. If any matters can be resolved by telephone, the Examiner is invited to call the undersigned attorney at the telephone number listed below. No fees beyond those being submitted concurrently herewith are believed due. However, the commissioner is authorized to charge any additional required fees, or credit any overpayment, to Foley & Lardner LLP Deposit Account No. 50-0872 (Order No. 076920-).

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